IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPEAL BRIEF

Applicant:	Barsness, *et al.*	Docket No.:	ROC920030264US1
Serial No.:	10/666,032	Group Art Unit:	2193
Filed:	09/18/03	Examiner:	Mitchell, Jason D.

TITLE: INTER-JOB BREAKPOINT APPARATUS AND METHOD

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir/Madam:

This appeal is taken from the Examiner's final rejection, set forth in the Office Action dated 08/03/07, of appellant's claims 8-9, 17-18, and 28-29. Appellant's Notice of Appeal under 37 C.F.R. § 1.191 was filed on 11/02/2007.

REAL PARTY IN INTEREST

International Business Machines Corporation is the Real Party in Interest.

RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences for this patent application.

STATUS OF CLAIMS

As filed, this case included claims 1-29. In response to the first office action dated 08/24/2006, an amendment was filed on 11/22/2006 that cancelled claims 4-5, 7, 13-14, 16, 20-21, 24-25, and 27, amended claims 1, 6, 8-10, 15, 17-19, 26, and 28-29 and added claims 30-32. In response to the second office action dated 02/27/2007, an amendment was filed on 05/29/2007 that cancelled claims 1-3, 6, 10-12, 15, 19, 22-23, 26 and 30-32. The claims at issue in this appeal are claims 8-9, 17-18, and 28-29 in the amendment filed on 05/29/2007, all of which stand finally rejected. No claim has been allowed.

STATUS OF AMENDMENTS

The amendments filed on 11/22/2006 and 05/29/2007 have been entered. Therefore, the claims at issue in this appeal are claims 8-9, 17-18, and 28-29 as pending in the amendment filed 05/29/2007.

SUMMARY OF CLAIMED SUBJECT MATTER

Claim 8 recites an apparatus comprising at least one processor (110 in FIG. 1; p. 7 line 5); a memory coupled to the at least one processor (120 in FIG. 1; p. 7 lines 5-6); a first job residing in the memory and executed by the at least one processor (124 in FIG. 1; p. 7 lines 13, 18-19); a second job residing in the memory and executed by the at least one processor (125 in FIG. 1; p. 7 lines 13, 18-19); an inter-job breakpoint mechanism (126 in FIG. 1; p. 7 lines 13-14) that detects at least one condition in the first job and, in response thereto, modifies a program variable in the second job (300 in FIG. 3; p. 7 line 24 – p. 8 line 8; p. 10 lines 13-21).

Claim 17 recites a method for debugging comprising the steps of defining at least one condition in a first job (127 in FIG. 1; p. 7 lines 24-25); defining at least one action to take on a second job (128 in FIG. 1; p. 7 lines 24-25); monitoring execution of the first job (step 310 in FIG. 3; p. 10 lines 17-18); monitoring execution of the second job (step 310 in FIG. 3; p. 10 lines 17-18); and when the at least one condition in the first job is satisfied (320=YES in FIG. 3; p. 10 line 20), modifying a program variable on the second job (330 in FIG. 3; p. 7 line 24 – p. 8 line 8; p. 10 lines 13-21).

Claim 28 recites a computer-readable program product comprising an inter-job breakpoint mechanism that monitors execution of first and second jobs (126 in FIG. 1; p. 7 lines 13-14; p. 10 lines 17-18), and when at least one condition in the first job is satisfied (320=YES in FIG. 3; p. 10 line 20), modifies a program variable on the second job (330 in FIG. 3; p. 7 line 24 – p. 8 line 8; p. 10 lines 13-21); and recordable media bearing the inter-job breakpoint mechanism (195 in FIG. 1; p. 10 lines 8-10).

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The following grounds of rejection are presented for review on this Appeal:

1. Whether claims 8, 17, and 28 are unpatentable under 35 U.S.C. §103(a) as being obvious in view of "Global Events and Global Breakpoints in Distributed Systems" by Haban and Weigel (hereinafter "Haban") in view of U.S. Re. No. 26,852 to Heinen, Jr. (hereinafter "Heinen").

2. Whether claims 9, 18, and 29 are unpatentable under 35 U.S.C. §103(a) as being obvious in view of Haban and Heinen in view of U.S. Patent No. 6,083,281 to Diec *et al.* (hereinafter "Diec").

ARGUMENT

Issue 1: Whether claims 8, 17, and 28 are unpatentable under 35 U.S.C. §103(a) as being obvious in view of Haban and Heinen.

Claims 8, 17, and 28

In rejecting claim 8, the examiner admits Haban does not explicitly disclose modifying a program variable in a second job. The examiner then states Heinen teaches a message that modifies a program variable in a second job, citing col. 7, lines 30-32 of Heinen. The cited language of Heinen states:

> . . . DEPOSIT – a message requesting that data forming part of the message be deposited in the memory of the specified job or process; . . .

The examiner's mapping of Heinen on claim 8 fails for two reasons. First, the express teachings of Heinen do not teach or suggest modifying a program variable. The depositing of information in the memory of a specified job or process does not imply modifying a program variable. Second, the DEPOSIT command in Heinen is a user command as specified at col. 7 line 28 of Heinen. A DEPOSIT command thus allows a user to specify what data is deposited in the memory of a specified job or process. The DEPOSIT command of Heinen thus expressly teaches away from the limitations in claim 8, which states:

> . . . an inter-job breakpoint mechanism that detects at least one condition in the first job and, in response thereto, modifies a program variable in the second job.

The modifying of a program variable in the second job as expressly recited in claim 8 is performed by the inter-job breakpoint mechanism in response to the inter-job breakpoint mechanism detecting at least one condition in the first job. Providing a user DEPOSIT command as taught in Heinen does not read on a software mechanism that modifies a program variable in the second job in response to the software mechanism detecting at least one condition in the first job. Because neither Haban, Heinen, nor their combination teach or suggest an inter-job breakpoint mechanism that detects at least one condition in the first job and, in response thereto, modifies a program variable in the second job, claim 8 is allowable over the combination of Haban and Heinen.

In the Response to Arguments section on p. 3 of the pending office action, the examiner states:

> Although Heinen's DEPOSIT command is disclosed as a 'user command' this would not preclude one of ordinary skill in the art from recognizing it's [sic] usefulness as an automatically triggered action in Haban's system (pg. 173, col. 2, par. 2 "the action associated with the satisfaction is performed").

Appellant respectfully asserts the examiner's rejection based on the combination of Heinen and Haban is in error. The only motivation for combining Heinen and Haban in the manner proposed by the examiner is through the user of impermissible hindsight reconstruction. Absent the teachings in appellant's claims, one of ordinary skill in the art would not be motivated to convert the user DEPOSIT command in Heinen into an automated command performed by a software process as recited in claim 8.

Appellant respectfully asserts the examiner's rationale for combining Heinen and Haban is defective. The examiner states:

> It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Haban and Heinen to provide means for debugging distributed processes (Haban Title "Global Breakpoints in Distributed Systems"; Heinen Abstract "debugging . . . jobs or processing running on one or more remote units").

The examiner has provided a very general motivation to combine Haban and Heinen, namely "to provide means for debugging distributed processes". This motivation is a general motivation that is present in both references. This general motivation does not provide motivation for combining Haban and Heinen in the manner claimed, especially when the combination requires converting a user command in Heinen to a command initiated by a software process as claimed. The courts have consistently held that a person of ordinary skill in the art must not only have had some motivation to combine the prior art teachings, but some motivation to combine the prior art teachings in the particular manner claimed. *See*, e.g., *In re Kotzab*, 217 F.3d 1365, 1371 (Fed. Cir. 2000) ("Particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed."). The motivation to combine must have some relationship to the combination in the claimed invention, and not be just some general benefit. Because the examiner's motivation to combine is a general benefit, and does not address reasons why one of ordinary skill in the art would combine Haban and Heinen in the manner claimed, the examiner has failed to establish a prima facie case of obviousness for rejecting claim 8 under 35 U.S.C. §103(a).

A reasonable combination of Haban and Heinen in a manner consistent with their teachings would result in the ability to execute the user commands in Heinen in the system of Haban. Nowhere is there any suggestion in either Haban nor Heinen nor their combination that would suggest to one of ordinary skill in the art to convert the user command in Heinen to a software-initiated function as recited in claim 8. For these reasons, claim 8 is allowable over the combination of Haban and Heinen.

Claims 17 and 28 include limitations similar to those in claim 8 discussed above, and are therefore allowable for the same reasons. Appellant respectfully requests the examiner's rejection of claims 8, 17 and 28 under 35 U.S.C. §103(a) be reversed.

Issue 2: Whether claims 9, 18, and 29 are unpatentable under 35 U.S.C. §103(a) as being obvious in view of Haban and Heinen in view of Diec.

Claims 9, 18, and 29

The arguments above with respect to claim 8 apply equally to claims 9, 18 and 29, and are incorporated in this section by reference. The examiner rejected claims 9, 18 and 29 under 35 U.S.C. §103(a) as being unpatentable over Haban in view of Heinen and further in view of Diec. In the rejection, the examiner admits the Haban-Heinen combination does not explicitly disclose the response outputs a debug message to a second job's output. The examiner then states Diec teaches these limitations, citing col. 2 lines 1-5 of Diec, which recites: "issuing a message to another software object to trigger generation of tracing data." The examiner's mapping of Diec on the limitations in claim 9, 18 and 29 is in error because issuing a message to another software object as taught in Diec does not read on outputting a debug message to the second job's output as recited in claims 9, 18 and 29. While issuing a message to another software object to trigger generation of tracing data may result in generating output from a job, the message is not ***in*** the output from the job. As a result, claims 9, 18 and 29 are allowable over the combination of Haban, Heinen and Diec.

In the Response to Arguments section of the pending office action, the examiner states:

> . . . the examiner asserts that, given the broadest reasonable interpretation of the claim, Diec's disclosure of "issuing a message to another software object to trigger generation of tracing data" (col. 2, lines 3-5) anticipates the claimed "output[ting] a debug message" ('tracing data') "to the second job's output" (col. 9, lines 11-16 "the default logfile associated to the object").

In the examiner's attempt to shore up this rejection, the examiner instead introduces inconsistencies that demonstrate the flaw in the rejection. In the office action, the examiner apparently maps the message issued to another software object to trigger the generation of tracing data on the debug message in claim 9, and maps the tracing data on the second job's output in claim 9. As appellant stated clearly above, the message in Diec to trigger the generation of tracing data is not in the tracing data, so Diec does not read on the limitations in claim 9. Now, for the first time in the Response to Arguments section, the examiner reads the 'tracing data' on the debug message in claim 9. As a result, the rejection has an ambiguity regarding the examiner's reading of Diec on the limitations in claim 9. Does the message in Diec that triggers the generation of tracing data read on the debug message in claim 9, or does the tracing data read on the debug message in claim 9? As stated above, the message in Diec that triggers the generation of tracing data cannot read on the debug message in claim 9 because the message is not in the trace output. The tracing data cannot read on the debug message in claim 9 because the tracing data in Diec, while in the output of the second job, is not a "debug message" within any reasonable scope of that claim term. In addition, the tracing data in Diec is not a debug message output in response to detecting the at least one condition in the first job, but instead is generated in response to a message that triggers the generation of tracing data. We thus see that there are three pertinent items in Diec: 1) message that triggers generation of tracing data; 2) trace data generated in response to the message in 1); and 3) default logfile to which the trace data is written. In summary, the message in 1) does not read on the debug message in claim 9 because the message is not included in the trace data in Diec. The trace data in 2) does not read on the debug message in claim 9 because it is not a debug message, and because it is not output by an inter-job breakpoint mechanism to the second job's output in response to detecting the at least one condition in the first job. It is output in response to receiving the message that indicates to start the trace data. For the many reasons given above, the examiner's rejection of claim 9 is in error.

For the examiner's rejection of claim 9 to have merit, one of ordinary skill in the art at the time the invention was made would have to be motivated to detect at least one condition in the first job as taught in Haban, and in response to this detection, outputting tracing data as taught in Diec to a logfile associated with an object. The examiner has made no such statement. The examiner's stated motivation for combining Haban, Heinen and Diec is:

> It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Haban-Heinen and Diec in order to provide means for debugging distributed processes (Haban Title "Global Breakpoints in Distributed Systems"; Heinen Abstract "debugging . . . jobs or processing running on one or more remote units"); Diec col. 2, lines 10-12 "provide a distributed data network . . . that has tracing capability").

The examiner has provided a very general motivation to combine Haban, Heinen and Diec, namely "to provide means for debugging distributed processes". This motivation is a general motivation that is present in both references. This general motivation does not provide motivation for combining Haban, Heinen and Diec in the manner claimed. The examiner made no particular finding as to the reason one of ordinary skill in the art would have selected the components for the combination in the manner claimed. Because the examiner's motivation to combine is a general benefit, and does not address reasons why one of ordinary skill in the art would combine Haban, Heinen and Diec in the manner claimed, the examiner has failed to establish a prima facie case of obviousness for rejecting claim 9 under 35 U.S.C. §103(a).

A reasonable combination of Haban, Heinen and Diec in a manner consistent with their teachings would result in the ability to start logging trace data for a software application as taught in Diec in the system of Haban-Heinen. Nowhere is there any suggestion in any of Haban, Heinen, Diec nor their combination that would suggest to one of ordinary skill in the art to combine these references in the manner recited in claim 9. For these reasons, claim 9 is allowable over the combination of Haban, Heinen and Diec.

Claims 18 and 29 include limitations similar to those in claim 9 addressed above, and are therefore allowable for the same reasons. In addition, claims 9, 18 and 29 are also allowable as depending on allowable independent claims. Appellant respectfully requests the examiner's rejection of claims 9, 18 and 29 under 35 U.S.C. §103(a) be reversed.

CONCLUSION

Claims 8-9, 17-18, and 28-29 are addressed in this Appeal. For the numerous reasons articulated above, appellant maintains that the rejections of claims 8-9, 17-18, and 28-29 are erroneous.

Appellant respectfully submits this Appeal Brief fully responds to, and successfully contravenes, every ground of rejection and respectfully requests that the final rejection be reversed and that all claims in the subject patent application be found allowable.

Respectfully submitted,

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CLAIMS APPENDIX

1-7 (Cancelled)

8. An apparatus comprising:

at least one processor;

a memory coupled to the at least one processor;

a first job residing in the memory and executed by the at least one processor;

a second job residing in the memory and executed by the at least one processor;

an inter-job breakpoint mechanism that detects at least one condition in the first job and, in response thereto, modifies a program variable in the second job.

9. The apparatus of claim 8 wherein the inter-job breakpoint mechanism, in response to detecting the at least one condition in the first job, outputs a debug message to the second job's output.

10-16 (Cancelled)

17. A method for debugging comprising the steps of:

defining at least one condition in a first job;

defining at least one action to take on a second job;

monitoring execution of the first job;

monitoring execution of the second job; and

when the at least one condition in the first job is satisfied, modifying a program variable on the second job.

18. The method of claim 17 further comprising the step of outputting of a debug message to the second job's output when the at least one condition in the first job is satisfied.

19-27 (Cancelled)

28. A computer-readable program product comprising:

(A) an inter-job breakpoint mechanism that monitors execution of first and second jobs, and when at least one condition in the first job is satisfied, modifies a program variable on the second job; and

(B) recordable media bearing the inter-job breakpoint mechanism.

29. The program product of claim 28 wherein the inter-job breakpoint mechanism, in response to detecting the at least one condition in the first job, outputs a debug message to the second job's output.

30-32 (Cancelled)

EVIDENCE APPENDIX

An Evidence Appendix is not required for this Appeal Brief.

RELATED PROCEEDINGS APPENDIX

A Related Proceedings Appendix is not required for this Appeal Brief.